What claimed is :

1. A method for synthesizing a calix[4]hydroquinone(CHQ) organic nanotube, which comprises dissolving CHQ in an aqueous acetone solution, and allowing acetone to evaporate off the resulting solution at a temperature ranging from 0 to 20 ℃ to effectuate CHQ crystallization into a self-assembled nanotube.

2. The method of claim 1, wherein cesium sulfate(Cs_2SO_2) is added to the aqueous acetone solution as a crystallization promotor.

3. The method of claim 1, wherein the nanotube is in the form of a self-assembled tubular needle-like crystal.

4. An organic nanotube synthesized by the method according to claim 1.

5. A method for synthesizing a nanowire, which comprises adding the organic nanotube of claim 4 to an aqueous solution containing a metal salt to let the metal ion enter the cavity of the nanotube and allowing the CHQ moieties of the nanotube to reduce the metal ion into the form of a nanowire.

6. The method of claim 5, wherein the metal salt is a salt of a metal having an oxidation potential of at least 0.7 V.

7. The method of claim 6, wherein the metal is selected from silver, gold, palladium, platinum and mercury.

8. The method of claim 5, wherein the reducing reaction is carried out under UV irradiation.

9. A nanowire synthesized by the method according to claim 5.